

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

*GP 1635*

Applicant(s): Eric T. Kool

Group Art Unit: 1635

Serial No.: 09/997,931

Examiner: S. McGarry

Filed: 11/30/01

Docket No.: 220.00010150

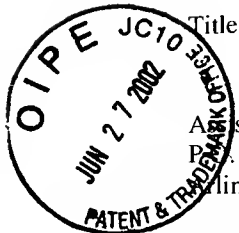
Conf. No.: 5355

Title: CIRCULAR DNA VECTORS FOR SYNTHESIS OF RNA AND DNA

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**TECH CENTER 1600/2900**



Assistant Commissioner for Patents  
P.O. Box 2327  
Arlington, VA 22202

We are transmitting the following documents along with this Transmittal Sheet (which is submitted in triplicate):

- ☒ **Small entity status is entitled to be asserted in the above-identified application.**
- ☐ An itemized return postcard.
- ☐ A Petition for Extension of Time for \_\_ month(s) and a check in the amount of \$\_\_ for the required fee.
- ☒ An Information Disclosure Statement (4 pgs); 1449 forms (10 pgs); and copies of 29 documents.
- ☐ A check in the amount of \$\_\_, representing \_\_.
- ☐ A certified copy of a \_\_ application, Serial No. \_\_, filed \_\_\_\_, the right of priority of which is claimed under 35 U.S.C. §119.
- ☐ Other: \_\_.
- ☐ Amendment ☐ No Additional fee is required. ☐ The fee has been calculated as shown:

Fee Calculation for Claims Pending After Amendment					
	Pending Claims after Amendment (1)	Claims Paid for Earlier (2)	Number of Additional Claims (1-2)	Cost per Additional Claim	Additional Fees Required
Total Claims				x \$9 =	
Independent Claims				x \$42 =	
One or More New Multiple Dependent Claims Presented? If Yes, Add \$140 Here →					
Total Additional Claim Fees Required					

**Please consider this a PETITION FOR EXTENSION OF TIME for a sufficient number of months to enter these papers and please charge any additional fees or credit overpayment to Deposit Account No. 13-4895. Triplicate copies of this sheet are enclosed.**

**CERTIFICATE UNDER 37 C.F.R. §1.8:** The undersigned hereby certifies that this Transmittal Letter and the paper(s), as described hereinabove, are being deposited in the United States Postal Service, as first class mail, in an envelope addressed to: Assistant Commissioner for Patents, P.O. Box 2327, Arlington, VA 22202, on this 24th day of June, 2002.

MUETING, RAASCH & GEBHARDT, P.A.

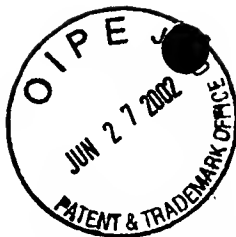
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**26813**

PATENT TRADEMARK OFFICE

By:   
Name: Victoria A. Sandberg  
Reg. No.: 41,287  
Direct Dial: 612-305-1226  
Facsimile: 612-305-1228



PATENT  
Docket No. 220.0001 0150

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Eric T. Kool ) Group Art Unit: 1635  
Serial No.: 09/997,931 ) Examiner: S. McGarry  
Filed: November 30, 2001 )  
For: CIRCULAR DNA VECTORS FOR SYNTHESIS OF RNA AND DNA

#7/K.T.  
7/2  
I.D.S.

INFORMATION DISCLOSURE STATEMENT

Assistant Commissioner for Patents  
P.O. Box 2327  
Arlington, VA 22202

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Sir:

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In compliance with the duty imposed by 37 C.F.R. § 1.56, and in accordance with C.F.R. §§ 1.97 *et. seq.*, the materials enclosed herewith are brought to the attention of the Examiner as possibly being of interest in connection with the above-identified patent application. Consideration of each of the documents listed on the attached 1449 forms is respectfully requested. Pursuant to the provisions of M.P.E.P. §609, Applicant further requests that a copy of the 1449 forms, marked as being considered and initialed by the Examiner, be returned with the next Official Communication.

The present application is a continuation-in-part application of co-pending U.S. patent application Serial No. 09/569,344, filed May 11, 2000 (now issued as U.S. Patent No. 6,368,802 on April 9, 2002), which is a continuation application of U.S. patent application Serial No. 08/805,631, filed February 26, 1997 (now issued as U.S. Patent No. 6,096,880 on August 1, 2000), which is a continuation-in-part application of U.S. patent application Serial No. 08/393,439, filed February 23, 1995 (now issued as U.S. Patent No. 5,714,320 on February 3, 1998), which is a continuation-in-part application of U.S. patent application Serial No. 08/047,860, filed April 15, 1993 (now abandoned).

**Information Disclosure Statement**

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Pursuant to the provisions of M.P.E.P. § 609 and in accordance with 37 C.F.R. § 1.98(d), Applicant has not included copies of the documents listed on the 1449 forms which were previously cited by or submitted to the Patent Office in the prior applications identified herein. A copy of the below listed documents are provided herewith as they were not of record in any of the prior applications.

**List of Documents, Copies of Which are Listed on 1449 Forms and Provided Herewith**

Document	Date	Name/Country
6,077,668	06/20/00	Kool
6,096,880	08/01/00	Kool
6,368,802	04/09/02	Kool
WO 96/00795	01/11/96	PCT
WO 97/19193	05/29/97	PCT
WO 97/20948	06/12/97	PCT
WO 97/43298	11/20/97	PCT
WO 98/04746	02/05/98	PCT
WO 99/09216	02/25/99	PCT
Ali et al., "Enzymatic synthesis of DNA probes complementary to a human variable number tandem repeat locus," 179(2):280-283 (June 1, 1989).		
Beaucage et al., "The Functionalization of Oligonucleotides Via Phosphoramidite Derivatives," <i>Tetrahedron</i> , 49(10):1925-1963 (1993).		
Bledsoe et al., "Molecular homology and DNA hybridization," <i>J. Mol. Evol.</i> , 30(5):425-433 (May 1990).		
Egholm et al., "PNA hybridizes to complementary oligonucleotides obeying the Watson-Crick hydrogen-bonding rules," <i>Nature</i> , 365(6446):566-568 (Oct. 7, 1993).		
Elroy-Stein et al., "Cytoplasmic expression system based on constitutive synthesis of bacteriophage T7 RNA polymerase in mammalian cells," <i>Proc. Natl. Acad. Sci. USA</i> , 87:6743-6747 (Sept. 1990).		
Horn et al., "The Synthesis of Branched Oligonucleotides as Signal Amplification Multimers for Use in Nucleic Acid Assays," <i>Nucleosides &amp; Nucleotides</i> , 8(5&6):875-877 (1989).		

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Kawai et al., "A simple method of detecting amplified DNA with immobilized probes on microtiter wells," *Anal. Biochem.*, 209(1):63-69 (Feb. 15, 1993).

Ledwith et al., "Preparation of synthetic tandem-repetitive probes for DNA fingerprinting," *Biotechniques*, 9(2):149-152 (Aug. 9, 1990).

Lee et al., "A Molecular Titration Assay to Measure Transcript Prevalence Levels," in *Methods in Enzymology*, Eds., Berger et al., Academic Press, Inc., Orlando, FL, Vol. 152, Title page, pp. 633-649 (1987).

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Nilsson et al., "Padlock probes: circularizing oligonucleotides for localized DNA detection," *Science*, 265(5181):2085-2088 (1994).

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Seyhan et al., "Intracellular RNA cleavage by the hairpin ribozyme," *Nucleic Acids Research*, 26(15):3494-3504 (1998).

Short Protocols in Molecular Biology, Chapter 14, 3<sup>rd</sup> Edition, Wiley & Sons (1995).

Sigmund et al., "Effects of *Escherichia coli* Nus A Protein on Transcription Termination in Vitro Are Not Increased or Decreased by DNA Sequences Sufficient for Antitermination in Vivo," *Biochemistry*, 27(15):5628-5635 (1988).

Uhlen, "Magnetic separation of DNA," *Nature*, 340(6236):733-734 (Aug. 31, 1989).

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**Information Disclosure Statement**

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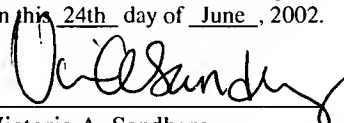
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It is believed that no fee is due, as this Information Disclosure Statement is filed prior to the receipt of any Action on the merits. However, in the event a fee is due, please charge any fee or credit any overpayment to Account No. 13-4895.

The Examiner is invited to contact Applicant's Representatives at the below-listed telephone number, if they can be of any assistance during prosecution of the present application.

**CERTIFICATE UNDER 37 C.F.R. 1.8:**

The undersigned hereby certifies that this paper is being deposited in the United States Postal Service, as first class mail, in an envelope addressed to: Assistant Commissioner for Patents, P.O. Box 2327, Arlington, VA 22202, on this 24th day of June, 2002.

  
Victoria A. Sandberg

Respectfully submitted for

Eric T. Kool

By

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**Customer Number 26813**



**26813**

PATENT TRADEMARK OFFICE

June 24, 2002

Date

By: 

Victoria A. Sandberg

Reg. No. 41,287

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<b>INFORMATION</b> DISCLOSURE STATEMENT		Atty. Docket No.: 220.00010150		Serial No.: 09/997,931			
				Conf. No.: 5355			
		Applicant(s): Eric T. Kool					
		Filing Date: 11/30/01		Group: 1635			
<b>U.S. PATENT DOCUMENTS</b>							
Examiner Initial		Document Number	Date	Name	Class SubClass	Filing Date If Appropriate	
		4,795,700	01/03/89	Dervan et al.			
		4,837,312	06/06/89	Dervan et al.			
		4,987,071	01/22/91	Cech et al.			
		5,093,246	03/03/92	Cech et al.			
		5,246,921	09/21/93	Reddy et al.			
		5,258,506	11/02/93	Urdea et al.			
		5,354,668	10/11/94	Auerbach			
		5,354,855	10/11/94	Cech et al.			
		5,426,180	06/20/95	Kool			
		5,470,724	11/28/95	Ahern			
		5,498,531	03/12/96	Jarrell			
		5,500,357	03/19/96	Taira et al.			
		5,648,245	07/15/97	Fire et al.			
		5,714,320	02/03/98	Kool			
		6,077,668	06/20/00	Kool			
		6,096,880	08/01/00	Kool			
		6,368,802	04/09/02	Kool			
<b>FOREIGN PATENT DOCUMENTS</b>							
		Document Number	Date	Country	Class SubClass	Translation	
						Yes	No
		JP 4-262799	09/18/92	Japan (and English Abstract)			X
		JP 4-304900	10/28/92	Japan		X	
		JP 5-146299	06/15/93	Japan		X	
		WO 92/01813	02/06/92	PCT			
		WO 92/17484	10/15/92	PCT			
		WO 94/03630	02/17/94	PCT			
		WO 96/00795	01/11/96	PCT			
		WO 96/33207	10/24/96	PCT			
		WO 97/19193	5/29/97	PCT			

<b>EXAMINER</b>	<b>Date Considered</b>
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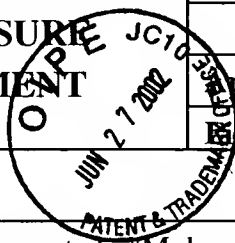
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		WO 97/43298	11/20/97	PCT				
		WO 98/04746	02/05/98	PCT				
		WO 98/38300	09/03/98	PCT				
		WO 99/09216	02/25/99	PCT				

**OTHER DOCUMENTS (Including Authors, Title, Date, Pertinent Papers, etc.)**

		"Affinity Chromatography: Practical and Theoretical Aspects," Mohr, Ed., Dekker Publishing: New York, Title page, Copyright page, and Contents pages (pp. v-viii) (1985).
		Agrawal, "Antisense Oligonucleotides: Towards Clinical Trials," <i>TIBTECH</i> , 14:376-387 (1996).
		Aguilar et al., "Hairpin, Dumbbell, and Single-Stranded Phosphodiester Oligonucleotides Exhibit Identical Uptake in T. Lymphocyte Cell Lines," <i>Antisense &amp; Nucleic Acid Drug Development</i> , 6:157-163 (1996).
		Aiyar et al., "A Mismatch Bubble in Double-stranded DNA Suffices to Direct Precise Transcription Initiation by <i>Escherichia coli</i> RNA Polymerase," <i>J. Biol. Chem.</i> , 269:13179-13184 (1994).
		Albrecht et al., "Cationic lipid mediated transfer of c-abl and bcr antisense oligonucleotides to immature normal myeloid cells: Uptake, biological effects and modulation of gene expression," <i>Ann. Hematol.</i> , 72:73-79 (1996).
		Ali et al., "Enzymatic synthesis of DNA probes complementary to a human variable number tandem repeat locus," <i>Anal. Biochem.</i> , 179(2):280-283 (June 1, 1989).
		Ashley et al., "Chemical Synthesis of Oligodeoxynucleotide Dumbbells," <i>Biochemistry</i> , 30:2927-2933 (1991).
		Beaucage et al., "Deoxynucleoside Phosphoramidites - A New Class of Key Intermediates for Deoxypolynucleotide Synthesis," <i>Tetrahedron Lett.</i> , 22(20):1859-1862 (1981).
		Beaucage et al., "The Functionalization of Oligonucleotides Via Phosphoramidite Derivatives," <i>Tetrahedron</i> , 49(10):1925-1963 (1993).
		Blanco et al., "Highly Efficient DNA Synthesis by the Phage $\phi$ 29 DNA Polymerase," <i>J. Biol. Chem.</i> , 264(15):8935-8940 (1989).

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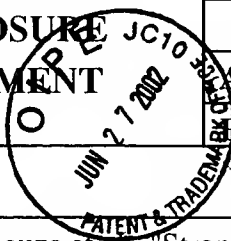


	Bledsoe et al., "Molecular homology and DNA hybridization," <i>J. Mol. Evol.</i> , 30(5):425-433 (May 1990).
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	Chowrira et al., "In Vitro and In Vivo Comparison of Hammerhead, Hairpin, and Hepatitis Delta Virus Self-Processing Ribozyme Cassettes," <i>Journal of Biological Chemistry</i> , 269:25856-25864 (1994).
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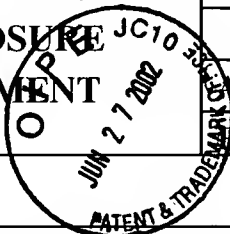
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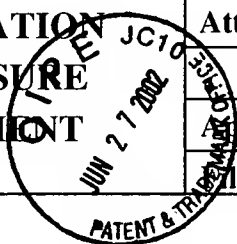
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	Guy-Caffey et al., "Novel Polyaminolipids Enhance the Cellular Uptake of Oligonucleotides," <i>J. Biol. Chem.</i> , 270(52):31391-31396 (1995).
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	Kim et al., "Dimethyl Phosphate Hydrolysis at Neutral pH," <i>J. Am. Chem. Soc.</i> , 114:9792-9795 (1992).
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	Koizumi et al., "Ribozymes Designed to Inhibit Transformation of NIH3T3 Cells by the Activated c-Ha-ras Gene," <i>Gene</i> , 117:179-184 (1992).
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	Kool et al., "Abstract of National Institute of General Medical Sciences Grant No. 5R01-GM46625-06," titled "Binding of HIV 1 Sequences by Cyclic Oligonucleotides," (funded in Fiscal Year 1997).

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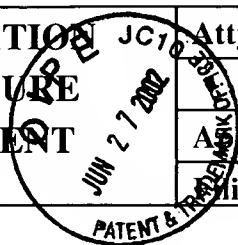
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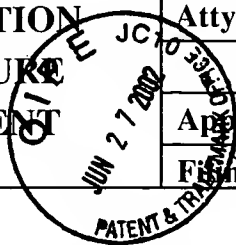
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